

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-17 (Canceled).

Claim 18 (New): A fuel cell system management method including a reformer for supplying a hydrogen-containing reformed gas to a fuel cell assembly and a compressor for supplying air to the fuel cell assembly, the fuel cell assembly including cells arranged in modules, the method comprising:

measuring voltages across terminals of each cell of each module of the cell assembly;
calculating a voltage difference between a mean cell voltage for the cell assembly and a predetermined mean cell voltage;

comparing the voltage difference with a predetermined threshold voltage difference;
and

determining a presence of carbon monoxide poisoning in the cell assembly if the voltage difference is equal to or greater than the predetermined threshold voltage difference, and determining an absence of carbon monoxide poisoning in the cell assembly if the voltage difference is lower than the predetermined threshold voltage difference.

Claim 19 (New): The method as claimed in claim 18, wherein the predetermined mean cell voltage and the predetermined threshold voltage difference depend on an operating mode of the fuel cell assembly, the fuel cell assembly comprising, as operating modes, a start mode, a nominal mode, and a stop mode.

Claim 20 (New): The method as claimed in claim 18, wherein in case of the presence of carbon monoxide poisoning in the cell assembly, air is added to the reformed gas.

Claim 21 (New): The method as claimed in claim 19, wherein in case of the absence of carbon monoxide poisoning in the cell assembly,

a standard deviation of the voltages measured across the terminals of the cells of the cell assembly is calculated;

the standard deviation is compared with a predetermined threshold standard deviation;
and

presence or absence of water flooding in the cell assembly is determined based on the comparison, the presence of water flooding in the cell assembly being reflected by the standard deviation being equal to or higher than the predetermined threshold standard deviation, and the absence of water flooding in the cell assembly being reflected by the standard deviation being lower than the predetermined threshold standard deviation.

Claim 22 (New): A fuel cell system management method including a device for supplying hydrogen to a fuel cell assembly and a compressor for supplying air to the fuel cell assembly, the fuel cell assembly including cells arranged in modules, the method comprising:

measuring voltages across terminals of each cell of each module of the cell assembly;

calculating a standard deviation of the voltages measured across the terminals of the cells of the cell assembly;

comparing the standard deviation with a predetermined threshold standard deviation;
and

determining presence or absence of water flooding in the cell assembly based on the comparison, the presence of water flooding in the cell assembly being reflected by the standard deviation being equal to or higher than the predetermined threshold standard

deviation, and the absence of water flooding in the cell assembly being reflected by the standard deviation being lower than the predetermined threshold standard deviation.

Claim 23 (New): The method as claimed in claim 21, wherein in case of the presence of water flooding in the cell assembly, the water flooding is drained.

Claim 24 (New): The method as claimed in claim 21, wherein the predetermined threshold standard deviation value depends on an operating mode of the fuel cell assembly, the fuel cell assembly comprising, as operating modes, a start mode, a nominal mode, and a stop mode.

Claim 25 (New): The method as claimed in claim 21, wherein in case of the presence of water flooding in the cell assembly:

a standard deviation of the voltages measured across the terminals of the cells of the module is calculated for each respective module;

the module having the highest of the standard deviations calculated for each module is determined; and

the water flooding is drained exclusively for the module having the highest of the standard deviations, which is a most water-flooded module.

Claim 26 (New): The method as claimed in claim 25, wherein the water flooding is drained by increasing anode and cathode gas flow rates entering each module or entering a most water-flooded module.

Claim 27 (New): The method as claimed in claim 21, wherein the water flooding is drained by setting anode and cathode outlets of each module or anode and cathode outlets of a most water-flooded module at atmospheric pressure.

Claim 28 (New): A fuel cell system management system comprising:

- a reformer for supplying a hydrogen-containing reformed gas to a fuel cell assembly, the fuel cell assembly including cells arranged in modules;
- a compressor for supplying air to the fuel cell assembly;
- an electronic control unit;
- a sensor of a voltage across terminals of each of the cells of the cell assembly, connected to the electronic control unit to transmit voltage measurements across the terminals of a respective cell;
- a device for removing carbon monoxide poisoning in the cell assembly;
- a device for draining water flooding in the cell assembly;
- control means for controlling the devices for removing carbon monoxide poisoning and for draining the water flooding in the cell assembly; and
- processing means in the electronic control unit, for receiving measurements from the sensors of the voltage across the terminals of each of the respective cells and supplying measurement signals to the control means, the processing means comprising computation means and comparison means.

Claim 29 (New): The system as claimed in claim 28, wherein the carbon monoxide poisoning removal device comprises a valve controlled by the control means, connected to the compressor, for regulating an air flow rate added to the reformed gas.

Claim 30 (New): A fuel cell system management system comprising:

- a device for supplying hydrogen to the fuel cell assembly, the fuel cell assembly including cells arranged in modules;
- a compressor for supplying air to the fuel cell assembly;
- an electronic control unit;
- a sensor of the voltage across terminals of each of cells of the cell assembly, connected to the electronic control unit to transmit voltage measurements across the terminals of a respective cell;
- a device for draining water flooding in the cell assembly;
- control means for controlling the device for draining the water flooding in the cell assembly; and
- processing means in the electronic control unit, comprising computation means for calculating a standard deviation of the voltages measured across the terminals of the cells of the fuel cell assembly, and comparison means for comparing the standard deviation with a predetermined threshold standard deviation, the processing means determining therefrom presence or absence of water flooding in the cell assembly, the presence of water flooding in the cell assembly being reflected by the standard deviation being equal to or higher than the predetermined threshold standard deviation, and the absence of water flooding in the cell assembly being reflected by the standard deviation being lower than the predetermined threshold standard deviation.

Claim 31 (New): The system as claimed in claim 30, wherein the device for draining the water flooding in the cell assembly comprises a valve controlled by the control means for adjusting a total feed rate of cathodes of the modules or valves controlled by the control means, for adjusting a respective feed rate of the cathode of each module.

Claim 32 (New): The system as claimed in claim 30, wherein the device for draining the water flooding in the cell assembly comprises a valve controlled by the control means for adjusting a total feed rate of anodes of the modules or valves controlled by the control means, for adjusting a respective feed rate of the anode of each module.

Claim 33 (New): The system as claimed in claim 30, wherein the device for draining the water flooding in the cell assembly comprises a valve, controlled by the control means, for setting a total cathode outlet of the fuel cell assembly at atmospheric pressure or valves controlled by the control means, for setting a respective cathode outlet of each module to atmospheric pressure.

Claim 34 (New): The system as claimed in claim 30, wherein the device for draining the water flooding in the cell assembly comprises a valve, controlled by the control means, for setting a total anode outlet of the fuel cell assembly at atmospheric pressure or valves controlled by the control means, for setting a respective anode outlet of each module to atmospheric pressure.